

CLAIMS

1. An improved touch-screen image scrolling system, comprising:

an electronic image display screen;

5 a microprocessor coupled to said display screen to display information thereon and to receive interactive signals therefrom;

timer means associated with said microprocessor to provide timing capacity therefor;

a source of scroll format data capable of display on said display screen;

10 a keyboard coupled to said microprocessor to provide input control signals thereto;

finger touch program instructions associated with said microprocessor for sensing the speed, direction and time duration of a finger touch contact with said display screen:

scrolling motion program instructions associated with said microprocessor responsive to said duration of said finger touch contact such that, when said duration
15 exceeds a first given preset minimum time and is accompanied by motion along the surface of said screen followed by separation of said finger touch from said screen, a scroll format display on said screen is caused to begin to scroll in said sensed direction and at said sensed initial speed;

time decay program instructions associated with said microprocessor for reducing
20 the rate of scrolling displacement on said display screen at a given rate until motion is terminated;

stopping motion program instructions associated with said microprocessor for terminating scrolling displacement of the image on said screen upon first occurrence of any signal in the group of signals comprising:

- (a) a substantially stationary finger touch on the screen enduring for a period
5 longer than a preset minimum time, and
- (b) an end-of-scroll signal received from said scroll format data source.

2. The improved touch-screen image scrolling system of claim 1, wherein said scrolling motion program instructions further comprise instructions to move said display in
10 correspondence with movement of the finger touch, in response to movement following a touch having a stationary duration greater than said first preset given minimum time and less than a second given preset minimum time.

3. The improved touch-screen image scrolling system of claim 1, wherein said
15 scrolling motion program instructions further comprise instructions to move a touch-selected item relative to the stationary display in correspondence with movement of said finger touch, in response to motion following a touch having a stationary duration greater than said second given preset minimum time.

20 4. The improved touch-screen image scrolling system of Claim 1, wherein said group of signals for terminating scrolling displacement of the image on said display screen further comprises

(a) a signal indicating that the rate of scrolling displacement on said screen has decayed to a value below a predetermined given value.

5 5. The improved touch-screen image scrolling system of Claim 1, wherein
said microprocessor, and said timer means together comprise a processing unit of a
conventional computer.

6. The improved touch-screen image scrolling system of Claim 5, wherein said
source of scroll format data capable of display on said display screen comprises part of the
10 memory of said conventional computer.

7. An improved touch-screen image scrolling system, comprising:
an electronic image display screen;
a computer apparatus coupled to said display screen to display information
15 thereon and to receive interactive signals therefrom;
timer means within said computer apparatus to provide timing capacity therefor;
said computer apparatus having capacity to store scroll format data capable of
display on said display screen;
a keyboard coupled to said computer apparatus to provide input control signals
20 thereto;

finger touch program instructions associated with said computer apparatus for sensing the speed, direction and time duration of a finger touch contact with said display screen;

scrolling motion program instructions associated with said computer apparatus
 5 responsive to said duration of said finger touch contact such that, when said duration exceeds a preset minimum time and is accompanied by motion along the surface of said screen, a scroll format display on said screen is caused to begin to scroll in the sensed direction and at the sensed initial speed;

time decay program instructions associated with said computer apparatus for
 10 reducing the rate of scrolling displacement on said display screen at a given rate until motion is terminated;

stopping motion program instructions associated with said computer apparatus for terminating scrolling displacement of the image on said screen upon first occurrence of any signal in the group of signals comprising:

15 (a) a substantially stationary finger touch on the screen enduring for a period longer than a preset minimum time, and

(b) an end-of-scroll signal received from said scroll format data source.

8. An improved touch-screen image scrolling system, comprising:
 20 an electronic image display screen;
 a microprocessor coupled to said display screen to display information thereon and to receive interactive signals therefrom;

timer means associated with said microprocessor to provide timing capacity therefor;

a source of scroll format data capable of display on said display screen;

a keyboard coupled to said microprocessor to provide input control signals thereto;

5 finger touch program instructions associated with said microprocessor for sensing the speed, direction and time duration of a finger touch contact with said display screen:

scrolling motion program instructions associated with said microprocessor responsive to said duration of said finger touch contact such that, when said duration exceeds a first given preset minimum time, and is less than a second given preset minimum
10 that is greater than said first minimum, and is accompanied by motion along the surface of said screen, a scroll format display on said screen is caused to begin to scroll in the sensed direction and at the sensed initial speed;

said scrolling motion program instructions further comprising instructions to move a touch-selected item relative to the stationary display in correspondence with movement of
15 the finger touch, in response to motion following a touch having a stationary duration greater than said second given preset minimum time;

said scrolling motion program instructions still further comprising instructions to move said display in correspondence with movement of the finger touch, in response to motion following a touch having a stationary duration greater than said first given preset
20 minimum time and less than said second given preset minimum time;

time decay program instructions associated with said microprocessor for reducing the rate of scrolling displacement on said display screen at a given rate until motion is terminated;

stopping motion program instructions associated with said microprocessor for
5 terminating scrolling displacement of the image on said screen upon first occurrence of any signal in the group of signals comprising:

(a) a substantially stationary finger touch on the screen enduring for a period longer than a preset minimum time, and

(b) an end-of-scroll signal received from said scroll format data source.

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9. An improved method of controlling the scroll-like display of data on an electronic display screen, said method comprising the steps of:

sensing the duration of finger touch contact time with an electronic display screen having scrollable data displayed thereon;

15 sensing the speed and direction of motion of said finger touch contact with said display screen;

initiating scrolling motion of said scrollable data on said display screen in said sensed direction and at said sensed speed;

slowing the speed of said scrolling motion from the initiated speed thereof, at a
20 predetermined rate; and

terminating said scrolling motion when one of the conditions comprising the following group of conditions is sensed:

- (a) a substantially stationary finger touch having a finite duration is sensed;
- (b) an end-of-scroll signal is sensed.

10. The improved method of controlling the scroll-like display of data on an
5 electronic display screen, in accordance with Claim 7, wherein said group of conditions to
be sensed for terminating said scrolling motion further comprises: the speed of said
scrolling motion on said screen slows to a value below a predetermined given value.

11. The improved method of controlling the scroll-like display of data on an
10 electronic display screen, in accordance with claim 9, wherein said method comprises the
further step of sensing a finger touch on said screen having a duration greater than said first
given preset minimum time and less than a second given preset minimum time which is
greater than said first given time and then moving said display in correspondence with
movement of the finger touch.

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12. The improved method of controlling the scroll-like display of data on an
electronic display screen, in accordance with claim 9, wherein said method comprises the
further step of sensing a stationary finger touch on said screen having a duration greater
than a second preset given minimum time which is greater than said first given preset time
20 and then moving a touch-selected item relative to the stationary display in correspondence
with movement of the finger touch.